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LOGICAL PROCESSES FOR THE NEW YEAR.

It has been repeatedly urged, that the operations of the farm, should be thought out. The cultivator should not levy his tax upon the soil, as the old English kings levied a tax upon their subjects, as a mere matter of caprice or despotic ownership. The faculty of reason is the divine treasury of the soil. It is the storehouse of every energy, capacity and impulse. Out of it comes the creative influence, which shapes the masterpieces of science, of political forethought and of physical industry. Even the Fine Arts, illustrated and adorned by the imagination, derive all their method, suitability and force, from this department of the intellect. The question is, what will the cultivator do with it, through the new year upon which he is entering? Will he lend a too willing ear to Hope, which is a pleasant guest in trouble, but a treacherous friend in matters of business? Many a victim, who has failed to think out his profit and loss in the past, hopes that he will do better in the future, and rushes blindly into the same mistakes, which have already nearly effected his ruin. How many a cotton producer, who might have made money raising nothing but sweet potatoes, continues to overlook every question of climate, labor and soil, and exhausts himself down to the very last inspiration of nerve-force and the very last dollar of capital, that he may at last ride into bankruptcy on the patent ties of a cotton bale. He hopes, that the present year will be better than the past. There is not the semblance of a rational principle, upon which to found his expectations. All the suggestions of his intellect, and the facts of his experience testify against the wisdom of his conclusion. But the mad dog of cotton culture has bitten him, and the hydrophobia of a phrenic imagination has attacked every energy of his being. How many a young husbandman thinks that he is breathing a religious spirit into the new year, in adopting the errors of his ancestors. He fears a sort of sacrilege, in departing from the old paths, notwithstanding he has been dwelling in the same little cottage, and tilling the same unproductive fields ever since the day of his majority. He also has been drinking in the syren voice of hope. Somehow, contrary to all the dictates of reason, and the revelations of his own knowledge, he thinks there is life in the old land yet, and expects that the same old implements and tillage will yet turn up a gold mine, where his fathers endured poverty before him. Such delusions are almost incredible, and yet they fasten upon the experience of many.

Another foe to a hard, practical

thinking out of the future, is what may be called guessing at results. We would not undertake guessing as an accomplishment. We have known many scholars and thinkers in popular esteem, who were after all nothing but accomplished guessers. They possessed a sort of shrewd perceptive faculty, which seemed to penetrate into men and things by the power of intuition. They Mastered mathematics, the dead languages and physical science in the same way. But we have not the slightest idea, that this sort of thing will do for agriculture. Indeed, we know it will not. Have not the unsuccessful tillers of the soil, all around us, been guessing and has not guessing caused the land to mourn for its nakedness, poverty and sorrow? What are these men doing, when, without studying the nature of their own soil, the constituent tenements of certain crops, and the chemical principles of manures, they persist in making their farms a sort of Procrustean bed, upon which must be stretched out a certain harvest, which they have determined to produce, whether it is suitable or not? Are they not blind leaders of the blind? Are they not guessing their way along a road upon which if they would take reason as their guide, they would soon fill the land with gladness, plenty and rejoicing? Most unquestionably they are. And yet, some of these very men object to agricultural journals, and throw the weight of their influence against the diffusion of learning through the earth. But, thank Heaven, the number of this latter class is small. The farmers themselves are taking this matter in hand, and driving the selfish money-changers out of the temple which the have polluted.

We say, that a cool, deliberate reasoning from cause to effect, is the system which must be applied to the operations of the farm. Many persons seem to think, that logic is simply a part of a college curriculum, but is not to be employed as intellectual furniture for the battle and struggle of life. This is a serious mistake. It is as much as to say, that a skillful mechanic, after learning the use of his tools, is to cast them aside as utterly useless. Agriculture is a contest with the soil, with the great agents and forces of the physical universe, and with the unruly tempers and unmeasured ignorance of men. When a cultivator starts upon the race of the new year, he should study his facts, be sure of his premises, if he would lead on correctly to his conclusions. Does he wish to know, whether a certain improvement will work well in the midst of the obstacles and slow developments of his own land? Let him master the principles of the new discovery or invention, thoroughly digest the condition and requirements of his own soil, and the most difficult part of his work is already accomplished. Is he puzzled by the backwardness of human industry as to its results, by the almost universal paralysis of the vigorous limbs of agriculture in certain sections of the earth? Let him take as factors in the problem the political agents of the day. Let him know, that the infinite decrees as enshrined in physical law, in the nature of the climate, in the abundance or paucity of color, in the character of the land, in the duration of the seasons, are potential elements which cannot be overlooked. In a word, from the smallest and most insignificant matter on the farm, up to the highest measure of agricultural intelligence and exertion, from the barest and rudest necessity, up to the achievement of the richest luxury, the secret of success is to be found in a sensible and logical application of facts and materials. Here is the path of victory, of honor, and of opulence for the new year. We do not say, that there will not be sighs and groans of disappointment along this path. No sky is without its clouds, and no year can close without its crown of suffering. But an intelligent and persistent industry never fails to bring its reward.

L—G.

OUR OLD FIELDS.

Every country has some peculiar feature in its agricultural practice which impresses itself upon the landscape and imprints itself upon the memory of the observer. The trim hedges of England are inseparably associated with rural beauty and prosperous husbandry. The broad fields of France, undivided by hedge or ditch, and colored with the tints of different crops, are spread before the eye like an endless carpet of ever-varying hues; and the plains of Italy, with the same beauties as the fields of France, are additionally adorned with long lines of trees gracefully festooned with the luxuriant vine, attractive as well to the eye as to the palate. All this betokens taste, thrift, industry and prosperity. It remains to the Southern States to add its mite of peculiarity in the shape of a fearful anti-climax—in a form where deformity displaces beauty, where negligence antagonizes thrift, where indolence overcomes industry, and where poverty shrouds itself in the ruins of prosperity—the Southern States spreads out her old fields to the gaze of the world; and whether proudly or otherwise, they challenge attention.

It is a wonderful feature in a country so lately in a state of nature; in a country, within the memory of living men, unbroken almost in its forest sanctuary, and so lately the abode of the savage that the memory of his fearful cruelties still carries terror in its recital; in a country so lately opened up to cultivation that the wonderful exuberance of its virgin soil gave wealth to the generations just gone by, by only the application of the rudest form of labor; and in a country yet so new as still to be held out as lure to the overcrowded peoples of the old world as the happy refuge against want and the very hot-bed of agricultural richness; but a country, in fact, so scarred, so seamed, so blotched, so stripped, that many portions of it might seem to have been transported bodily from those fated regions beyond the seas, where time and war, and blighting tyranny and a fierce sun had turned the land to irretrievable desert.

These old fields stretch from the Potomac to the Gulf of Mexico; from the Atlantic to the Mississippi, and are the distinct results of lands too cheap and labor too unskilled; to which may be added as corollaries to the other two, staple crops imperative in their demands for rich soils to produce them, and rapacious in their exactions on forest lands to procure them.

It may very well be doubted whether the cotton gin was, after all, a real benefit to the South, since it over stimulated its industry at a time when the instrument of that industry was the unskilled labor of the negro slave. And it certainly does not admit of a doubt, that apart from the question of property, negro slavery was the heaviest weight that was ever hung upon the neck of agriculture. It was animal power, nothing more, and only a little more intelligent in comprehension than the mules it used, not a particle more interested in results than the brutes themselves. It was this labor and no other that was at the command of the cotton and tobacco planter, and under the impulse given to cotton cultivation by Whitney's invention, the forests in the older Southern States fell before the axe as if a tornado had swept through them, compelling that forward movement to newer regions, ending in encroachment upon the reservations of the persecuted Indian, in violation of national faith, in bloody war, and acquisition of territory tainted with such shameful antecedents; and leaving behind a track of desolation that still makes its reproachful appeal to the eye. The tobacco planter, circumscribed within narrower limits because of the comparatively local character of his product, was not less ruthless and reckless in his operations, and each year's work witnessed a fresh creation of "new ground," and an enlarging area of

old field, thrown out to wash and gully, or to be meagerly coated with a scanty herbage of broom sedge, the miserable compromise between vegetable life and death; and so the negro and the great staples have branded upon the features of the landscape its ineffaceably characteristics. If the landscape were the only sufferer, painful as is the picture it presents, it might be endured, because kindly nature has a tender way of gently tending the wounds on the bosom of mother earth, and wreathing around her scarred visage a graceful mantling of newer forms of life to conceal deformity. But we use the word "ineffaceably" seriously and sadly when we have in view so much that is beyond the power of nature's healing art. Whoever has seen the country along Hyco creek, in the counties of Person and Caswell, and along County Line creek in the latter county, will realize at a glance the utter hopelessness of any renovation throughout time. Steep, sharp hills, once covered with forest, recklessly cleared and cultivated to the very water side, now present the appearance of the hills bounding the great western plains, torn, gullied, washed, wasted and verdureless, never more to be enlivened by any green thing, but cursed to endless barrenness, because there is no foothold for vegetation. And all over the State—all over the South.—Hyco and County Line are reproduced in mournful frequency.

Increase of population may give increased value to land, and make the work of reclamation to some extent practicable and profitable. There are vast quantities of old field that may, in the course of a generation or two, be reclothed with trees; there are other tracts that skill and industry may even now restore to fertility; there are many that are absolutely past human skill. But, at least, an end can be put to the farther growth of old field territory by more careful attention to the area of cultivation now in use. There is growing skill in agricultural practices, there is growing population which cannot find new lands to clear up, and better still, there is a growing scarcity of forest land and increasing value attached to what remains, and therefore an end approaches to the creation, on an extended scale, of any more "old fields."

J. D. C.

FATTENING HOGS.

We did not reach the main point of loss in treating of this subject last week. At this season, all over the State, hogs are confined to rail pens, with probably a few boards thrown over, intended for their protection. Pine straw or oak leaves are used as litter, with poles at the bottom to keep them off of the ground. Pork is dear enough when caught up and managed as we have described. But in this absolute waste of manure is the greatest "leak in the hog-trough." Exposed to the influences of heat, air and rain, of course decomposition takes place at once. The aerial properties of the manure pass into the atmosphere. The earthy portion is washed through the leaves and cracks of the rails into the soil. And if the farmer removes the rails, scrapes up the soil and scatters the leaves he gets but the mineral substances of the manure, whilst nearly all that is really valuable (certainly to our clay soils), the nitrogen, has escaped from him and gone back into the general store house, the air. We should estimate this loss certainly one half. Now, if in every ton of corn (or 36 bushels) there are seven dollars and seventy-five cents worth of manure and one third of that is lost, who can calculate this vast amount of fertilizing matter that in North Carolina is thrown away. If there is not so much as our estimate, that there is a great loss none will deny.

Not long since we had just passed a neighbor's pen for fattening pork, and remonstrated with him for this thoughtless management. Standing some hundreds of yards off, looking at his field of tobacco, he was giving his different experiments

in cultivation, fertilizers, &c., and our eye caught a marked difference in the crop clear across the field. He explained that the large and green was where the stable manure left off, and the yellow and smaller was where the hog pen manure began. Now, was there any good reason for this difference? The horse was fed on corn and fodder principally, with oats and oat straw. The hog had corn almost exclusively. Corn and oats are quite equal in manurial value. Then was it the straw and fodder that gave the horse the advantage? Not if agricultural chemists know anything of the relative value of these two articles (seed and straw) for manure. Then is it not the most reasonable conclusion that the horse was rather at a disadvantage as to food, but the shed under which he was fed made him more than the equal of the hog. The manure of the one was leached, the manure of the other was unleached. The one was subjected to the influences of the sun, rain and air, the other was pressed close and compact, and hid from these influences.

N. A. G.

BLUE FISH.

Maj. H. A. Gilliam, writing to the Department in answer to inquiries, gives some particulars of the habits and characteristics of this highly prized fish; though he did not write for publication:

"But few blue fish have been taken on our coast this winter. They are taken only between New York and Hatteras, not above or below, until last fall, when a few were taken on the coast between Ocracoke and Beaufort. Their movement is southward. They come south for food, which they find in November and December in immense shoals of fat-backs, which school near shore. Fat-backs are known north as moss-bunkers, and arrives south as bug fish and fat-backs. They are generally in great abundance in November and December on the Virginia and North Carolina coast.

The blue fish are about thirty inches long and average about eight pounds to the fish, and are of a uniformity in size that is wonderful. They swim among the breakers near shore, where fat-backs, shad or other small fish abound. They live on fish alone, and are rapacious.

Many small vessels come south to fish on our coast every season, bringing boats and nets and a supply of ice for packing. The fish are gilled while pursuing their bait or prey; the meshes (six inches) let the small fish through and gill the blue fish. This season there are no fat-backs on our coast.

The water has been clear and not being tempted by pursuit of food, the blue fish go under the net, or otherwise evade it. There have been and are still great quantities of blue fish but no fat-backs—and none of any consequence have been caught—not a tenth of the average quantity.

In the months of March and April, blue fish, porpoises and sharks collect in great numbers at our inlets—Ocracoke, Hatteras, New Inlet and Oregon, and play sad havoc with the shad and herrings that are making their way to our waters.

It is said by the natives that the water is blooded for miles by the havoc. I have told you what I know about the blue fish. We cannot hatch it. If we could prevent its reproduction, it would add very greatly to the quantity of fish that come into our sounds.

OIL FROM COTTON SEED.

Cost of machinery, not including motive power, necessary to work up 100 barrels of cotton seed per day, \$5,000.

The machinery consists of a huller, screen, revolving oven, hydraulic press, and mill for grinding seed after hulling.

One hundred bushels of cotton seed produce thirty bushels of meal or cake, worth 85 cents per bushel of fifty pounds, (used as a fertilizer or for feeding stock,) and thirty-

five gallons of oil, worth 45 cents per gallon.

The seed, when kept in bulk, are very liable to heat, and great loss is sometimes sustained by not taking care to prevent heating, as the seed are thus rendered useless for oil making.

The above facts were obtained from Mr. A. M. McPheters, of Raleigh.

To the People of North Carolina.

It is known to you that in obedience to a provision of the new constitution of our State, the recent session of the Legislature passed a bill establishing a Department of Agriculture, Immigration and Statistics, and for the protection of sheep husbandry. Early after the adjournment of the General Assembly the Board of Agriculture was organized. They elected a Commissioner, Secretary and Treasurer, opened an office and museum in this city and went earnestly to work to carry out that wise provision of our organic law. Innumerable difficulties beset our effort by reason of our inexperience and the absence of a hearty and appreciative co-operation on the part of many of those whom we desired to benefit and yet we have met with a success so far, which is most encouraging.

In the first place the Commissioner has established a corps of reliable and intelligent correspondents in every county in the State, mostly farmers, who give trustworthy reports monthly of the state of the crops, the weather, the live stock, and all other kindred topics; enabling an intelligent man at any moment to make a fair estimate of our natural condition.

In the second place, we have established a laboratory at Chapel Hill, and secured the services of a skilled analytical chemist who has been actively engaged in testing scientifically the various kinds of artificial fertilizers which have become so extensively in use among our people, and in the ignorant purchase of which so much imposition has been practiced and so much money wasted. Many of the more worthless brands have been driven from the market whilst the good have been made still better, and the commercial value of all more generally understood. He is now engaged in analysing sugar beets, grown in various parts of the State to determine the quantity of such a fine matter they will produce in this climate, with a view to the establishment of sugar manufacturing if found to be favorable. He is also ready and prepared, under the Board, to analyse all soils, minerals, and substance whatever, that may be deemed of importance to the interests of agriculture.

In the third place, we have inaugurated the artificial propagation of fish, with a view to restocking our waters, once so full of food and pleasure to our people. Too late to make the most of the past season, we yet may be considered successful in progress made in this direction. More than half a million of young shad were obtained and cast into the Tar, Contentnea, Neuse, Cape Fear, Yadkin and Catawba rivers, and we have now a quarter of a million of the eggs of the California salmon in the process of hatching in our establishment at Salmon Gap in the Blue Ridge. These are to be distributed in the cool waters of our river heads among the mountains. Should their adaptation to those streams be established, the quantity can be multiplied indefinitely, and an awakened public sentiment can no doubt be made to influence the proper legislation to secure the clearing out of obstructions in the rivers.

Time and space forbid that we should attempt to tell you what the Board have tried to do in the way of obtaining statistics, inducing immigration, establishing a museum, and many other matters. Sufficient to say, they have attempted much and accomplished something in each direction; and one of the greatest of their accomplishments has been the renewed interest which has been awakened throughout the